

SR238 B**1. PRODUCT AND COMPANY IDENTIFICATION****Company**

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Sartomer

Customer Service Telephone Number: (800) SARTOMER
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: SR238 B
Synonyms: 1,6 HEXANEDIOL DIACRYLATE; HDDA
Molecular formula: C12H18O4
Chemical family: Acrylic ester
Product use: Electronics, Inks, Adhesives, Coatings, Paints

2. HAZARDS IDENTIFICATION**Emergency Overview**

Color: Clear - colourless
Physical state: liquid
Odor: musty

***Classification of the substance or mixture:**

Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319
Skin sensitisation, Category 1, H317
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 2, H411

*For the full text of the H-Statements mentioned in this Section, see Section 16.

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GHS-Labeling

Hazard pictograms:



Signal word:

Warning

Hazard statements:

- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H400 : Very toxic to aquatic life.
- H411 : Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements:

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Precautionary statements:

Prevention:

- P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P264 : Wash skin thoroughly after handling.
- P272 : Contaminated work clothing should not be allowed out of the workplace.
- P273 : Avoid release to the environment.
- P280 : Wear eye protection and face protection.
- P280 : Wear protective gloves.

Response:

- P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
- P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 : If eye irritation persists: Get medical advice/ attention.
- P362 : Take off contaminated clothing and wash before reuse.
- P391 : Collect spillage.

Disposal:

- P501 : Dispose of contents or container to an approved waste disposal plant.

Supplemental information:

Product code: FP01104-B

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Potential Health Effects:

If swallowed may cause irritation of the digestive tract. Possible cross sensitization with other acrylates and methacrylates. Effects due to processing releases or residual monomer: Irritating to eyes, respiratory system and skin.

Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Other:

This product may release fume and/or vapor of variable composition depending on processing time and temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
2-Propenoic acid, 1,6-hexanediyl ester	13048-33-4	<= 100 %	H315, H319, H317, H400, H411
2-Propenoic acid	79-10-7	<= 0.1 %	H226, H302, H332, H314, H318, H335, H400, H411

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:

If inhaled, remove victim to fresh air.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion:

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If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information if applicable) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES**Extinguishing media (suitable):**

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Fight fire from a protected location.

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Hazardous organic compounds

Polymerization is exothermic and can degenerate into an uncontrolled reaction.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:

Appropriate personal protective equipment is set forth in Section 8.

SR238 B**7. HANDLING AND STORAGE****Handling****General information on handling:**

Avoid breathing vapor or mist.

Avoid contact with skin, eyes and clothing.

Wash thoroughly after handling.

Emptied container retains vapor and product residue.

Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Viscous materials and those supplied as solids at room temperature may require heating to facilitate handling and transfer from their original containers. This product may be heated to a maximum of 60C/140F for up to 24 hours.

Do NOT use localized heat sources such as band heaters or steam. Use hot boxes or hot rooms for heating or melting. Ensure air space (oxygen) is present during product heating/melting. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. This product should be consumed in its entirety after heating/melting. Avoid re-heating multiple times; this may cause product degradation. If this product freezes, heat it as specified above and mix gently to redistribute the inhibitor.

Storage**General information on storage conditions:**

Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store out of direct sunlight in a cool well-ventilated place. Keep stabilizer levels constant to avoid explosive polymerization. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere.

Storage stability – Remarks:

Inhibitor levels should be maintained. The typical shelf-life for this product is 6 months.

This product tends to crystallize at or near room temperature. If product has crystallized, follow heating instructions above.

Storage incompatibility – General:

Store separate from:

Strong oxidizing agents

Strong reducing agents

Free radical generators

Inert gas

Oxygen scavenger.

Peroxides

Temperature tolerance – Do not store below:

32 °F (0 °C)

Temperature tolerance – Do not store above:

100 °F (38 °C)

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

2-Propenoic acid, 1,6-hexanediyl ester (13048-33-4)

US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended

Time weighted average	0.11 ppm (1 mg/m3)
Remarks:	Listed

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Avoid natural rubber gloves. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Color:	Clear - colourless
Physical state:	liquid
Odor:	musty
Odor threshold:	No data available
Flash point	> 201 °F (94 °C) (Pensky-Martens closed cup)
Auto-ignition temperature:	No data available.
Lower flammable limit (LFL):	No data available
Upper flammable limit (UFL):	No data available
pH:	~ 7
Density:	1.022 g/cm ³ (77 °F (25 °C))
Specific Gravity (Relative density):	1.022 (77 °F (25 °C))Water=1 (liquid)
Vapor pressure:	0.015 mmHg (77 °F (25 °C))
Vapor density:	No data available.
Boiling point/boiling range:	No data available
Melting point/range:	No data available.
Freezing point:	43 °F (6 °C)
Evaporation rate:	No data available
Solubility in water:	negligible
Refractive index:	1.456 77 °F (25 °C)
Viscosity, dynamic:	6 - 10 mPa.s 77 °F (25 °C) (Method: Brookfield)
Oil/water partition coefficient:	No data available.
Thermal decomposition:	391.78 °F (199.88 °C)

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Flammability: See GHS Classification in Section 2 if applicable

10. STABILITY AND REACTIVITY**Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization.

Hazardous reactions:

Hazardous polymerisation may occur.
Polymerization is exothermic and can degenerate into an uncontrolled reaction.

Materials to avoid:

Strong reducing agents
Free radical generators
Inert gas
Oxygen scavenger.
Peroxides
Strong oxidizing agents

Conditions / hazards to avoid:

This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Avoid direct sunlight. Do NOT expose to ultraviolet light.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Acrylates
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for SR238 B**Acute toxicity****Dermal:**

Acute toxicity estimate = 3,656 mg/kg.

Data for 2-Propenoic acid, 1,6-hexanediyl ester (13048-33-4)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:

May be harmful in contact with skin. (rabbit) LD50 = 3,650 mg/kg.

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Inhalation:

No deaths occurred. (rat) 7 h LC50 > 0.41 mg/l. (vapor)

Skin Irritation:

Causes skin irritation. (rabbit) Irritation Index: 4.67 / 8. (4 h)

Eye Irritation:

Causes serious eye irritation. (rabbit) OECD Test Guideline 405

Skin Sensitization:

May cause an allergic skin reaction. Guinea pig maximization test. Skin allergy was observed. (Strong sensitizer)

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): liver, Stomach / signs: changes in organ structure or function, changes in organ weights, clinical chemistry changes, reduced body weight

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Developmental toxicity

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No birth defects were observed.

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Other information

Possible cross sensitization with other acrylates and methacrylates.

Human experience**Skin contact:**

Skin allergy was observed. (based on reports of occupational exposure to workers) (studied using human volunteers) (subjects with dermatitis or eczema)

12. ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

Data on this material and/or its components are summarized below.

Data for 2-Propenoic acid, 1,6-hexanediyl ester (13048-33-4)**Biodegradation:**

Readily biodegradable. (28 d) biodegradation 60 - 70 %

Octanol Water Partition Coefficient:

log Pow: = 2.81, at 77 °F (25 °C)

Data for 2-Propenoic acid (79-10-7)

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Biodegradation:

Readily biodegradable. (28 d) biodegradation 81 %

Octanol Water Partition Coefficient:

log Pow: 0.46, at 77 °F (25 °C) (Method: OECD Test Guideline 107)

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for 2-Propenoic acid, 1,6-hexanediyl ester (13048-33-4)**Aquatic toxicity data:**

Very toxic to fish. *Oryzias latipes* (Japanese medaka) 96 h LC50 = 0.38 mg/l

Aquatic invertebrates:

Toxic. *Daphnia magna* (Water flea) 48 h EC50 = 2.7 mg/l

Algae:

Toxic. *Selenastrum capricornutum* (green algae) 72 h EC50 = 2.33 mg/l

Microorganisms:

Practically nontoxic. Activated sludge 30 min EC50 (Respiration inhibition) = 270 mg/l

Chronic toxicity to fish:

Toxic. *Oryzias latipes* (Japanese medaka) 39 d NOEC = 0.072 mg/l

Chronic toxicity to aquatic invertebrates:

Harmful. *Daphnia magna* (Water flea) 21 d NOEC 0.14 mg/l

Chronic toxicity to aquatic plants:

Harmful. *Desmodesmus subspicatus* (green algae) 72 h NOEC (growth rate) 0.9 mg/l

Data for 2-Propenoic acid (79-10-7)**Aquatic toxicity data:**

Harmful. *Oncorhynchus mykiss* (rainbow trout) 96 h LC50 = 27 mg/l

Aquatic invertebrates:

Harmful. Mysid shrimp 96 h LC50 = 97 mg/l

Harmful. *Daphnia magna* (Water flea) 48 h EC50 = 95 mg/l

Algae:

Very toxic. *Pseudokirchneriella subcapitata* (green algae) 72 h EC50 = 0.13 mg/l

Chronic toxicity to aquatic invertebrates:

Practically nontoxic. *Daphnia magna* (Water flea) 21 d NOEC (Reproduction inhibition) = 19 mg/l

Chronic toxicity to aquatic plants:

Toxic. *Desmodesmus subspicatus* (green algae) 72 h EC10 (Growth inhibition) 0.03 mg/l

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13. DISPOSAL CONSIDERATIONS

Waste disposal:

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
Technical name : (1,6 Hexanediol Diacrylate)
Class : 9
Packaging group : III
Marine pollutant : yes

International Maritime Dangerous Goods Code (IMDG)

UN Number : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name : (1,6 HEXANEDIOL DIACRYLATE)
Class : 9
Packaging group : III
Marine pollutant : yes
Flash point : > 201 °F (94 °C) Pensky-Martens closed cup

15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to

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Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

<u>Chemical name</u>	<u>CAS-No.</u>	<u>Reportable quantity</u>
2-Propenoic acid	79-10-7	5000 lbs

United States – State Regulations

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right to Know

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, 1,6-hexanediyl ester	13048-33-4
2-Propenoic acid	79-10-7
Benzene, methyl-	108-88-3

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Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid	79-10-7
Benzene, methyl-	108-88-3

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Chemical name</u>	<u>CAS-No.</u>
Benzene, methyl-	108-88-3

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H400 Very toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.

Latest Revision(s):

Reference number:	200003672
Date of Revision:	08/13/2020
Date Printed:	08/13/2020

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Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (<http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html>) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical

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Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.